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Engineering Note

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Project:	DAQ GUI
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Subject:	CRATER.py Version 1.3

CRATER is a python based GUI, which allows the DAQ Shifter to easily include, or exclude readout crates from a Global run and invoke or revoke SMT Monitoring. This note describes CRATER's features and operating instructions.

Getting Started

To launch CRATER, type the following:

1. setup d0online

2. start_daq crater

Operating premise

When CRATER is launched, check buttons are displayed for each system readout crate capable of being used in a DAQ global run. Each system has it's own dedicated page. Each check button is labeled with it's corresponding geographic sector designation (X20), the crate name (l2glb), and a description of what the crate name means (Level 2 Global).

A red or gray check button indicator displays the status of the current configuration. Red means the crate is IN the run. Gray means the crate is OUT of the run.

Taking a crate "into or out of the run" is accomplished by clicking on the indicator box, associated with a readout crate. The check button will turn either red or gray. Then click the SAVE Configuration for "system" button. Changes to the "system"_readout.xml file are not made until the SAVE button is invoked.

File

Save All :

This feature cycles through all system pages and generates the "system"_readout.xml file.

***BEWARE: If Save All is invoked, the status of smt_monitoring will be determined by the last subpage, MONITOR, not the state of the crates on the SMT subpage.

Revert to Last Save:

Reverts the status of the check buttons to that of the configuration that was last saved.

Restore from Backup File:

Restores the status of the check buttons from the backup configuration.

Exit:

Closes CRATER.

VIEW:

Larger:

This feature increases the size of the window displaying CRATER.

Smaller:

This feature decreases the size of the window displaying CRATER.

Cycle pages:

This feature cycles through each of the system pages, displaying them momentarily.

Cycle period:

This feature sets the amount of time the cycled pages are displayed from 2-20 sec.

Notebook Pages

Each system has a dedicated page. All pages L1, L2, MUON, CAL, CFT, SMT, and STT, contain the following buttons.

Turn All "system" Crates On/Off:

This button selects all of the crates listed on the page for either including them in the run (Red for ON) or excluding them in the run (Grey for OFF)

Save Configuration for "system":

This button only generates the "system"_readout.xml file for an individual system based on the page selected.

Special Features

L2

Unlike other systems, the L2 readout files are a little different. When a crate is taken OUT of the run, it is actually put into the readout file as an ALL_NOVBD device. A crate IN the run is considered an ALL_VBD device. The difference is that the ALL_NOVBD receives triggers but is not read out by L3 whereas; an ALL_VBD device receives triggers and is readout by L3. All crates are downloaded, included Null Devices, regardless of their state.

The L2 subpage contains an information box (purple) that describes the links between L2 crates and other system crates.

MUON

Turn All PDT Crates On/Off:

These buttons select only the PDT Muon crates. They are associated with geographic sectors X34 to X3B. The same color convention is used, Red for ON or IN the run, Grey for OFF or OUT of the run.

SMT

The SAVE Configuration button on the SMT supbpage has a dual purpose. The first purpose is to generate the smt_readout.xml file. The second purpose is to generate the smt_monitoring.xml file. The smt_monitoring.xml file is used to enable the SMT monitoring software when ATLEAST one SMT crate has been selected for the run. If all of the crates are out of the run, SMT monitoring is automatically disabled.

MONITOR

When the check button is red and the SAVE Configuration button is invoked, CRATER generates the appropriate smt_monitoring.xml file which enables SMT Monitoring. If the check button is gray, and the SAVE Configuration button his invoked, CRATER generates the smt_monitoring.xml file which disables SMT Monitoring.

** The SAVE Configuration button on the MONITOR subpage AND the SMT subpage are both capable of generating the smt_monitoring.xml file. In order to view the CURRENT state of smt_monitoring on the MONITOR subpage, invoke the Revert to Last Save option under the File pull-down menu. This will ensure that the check button is displaying the current state of the file.

SMT and CFT

Null Devices

Within the SMT and CFT systems, Sequencer Crates (Null Devices) are linked to each of the readout crates. CRATER automatically includes the appropriate Sequencer crates when SMT or CFT crates are selected.